In the Claims

1. (Currently amended) A machine implemented method of converting a source character string to a target character string, comprising:

    ~~receiving a first character string having the source character string;~~

    dividing ~~the~~a first character string into a plurality of sub-strings, the first character string having the source character string;

    converting the plurality of sub-strings to second character strings, through a dictionary;

    creating artificially created words as third character strings corresponding to the plurality of sub-strings;

    analyzing the second character strings and the third character strings;

    constructing fourth character strings from the second and third character strings based on the analysis;

    creating a candidate list based on the fourth character strings;

    selecting the target character string from the candidate list; and

    outputting the target character string;.

2. (Original) The method of claim 1, wherein the first character string comprises Japanese hiragana characters and wherein the dictionary is stored in a machine readable form prior to the receiving.

3. (Original) The method of claim 1, wherein the second character strings comprise Japanese words.

4.	(Original) The method of claim 1, wherein the third character strings comprise katakana characters.

5.	(Original) The method of claim 1, further comprising:

constructing the fourth character strings from the second character strings, if the second character strings contain a character string corresponding to the first character string; and

constructing the fourth character strings from the third character strings if the second character strings do not contain the character string corresponding to the first character sting.

6.	(Original) The method of claim 1, further comprising prioritizing the second character strings and the third character strings, based on priority information associated with the second character strings and the third character strings.

7.	(Original) The method of claim 6, the priority information comprises:

usage frequency of each of the second character strings;

character segment length; and

connection relationship information between the second character strings.

8.	(Original) The method of claim 6, further comprising calculating a priority value for each of the second and third character strings based on the priority information.

9.	(Original) The method of claim 1, further comprising retrieving priority information of the second character strings from the dictionary.

10. (Original) The method of claim 1, wherein the dictionary comprises multiple dictionaries.

11. (Original) The method of claim 1, wherein the analysis of the second and third character strings is performed based on a set of rules.

12. (Original) The method of claim 11, wherein the set of rules comprises information of usage frequency of the character strings and connection relationship between the character strings.

13. (Original) The method of claim 12, wherein the set of rules further comprises information of character segment length and semantic/grammar rules.

14. (Original) The method of claim 11, wherein the construction of the fourth character strings from the second and third character strings is based on the set of rules.

15. (Original) The method of claim 1, further comprising calculating priority value of each of the fourth character strings.

16. (Original) The method of claim 15, wherein the candidate list is created based on the priority values of the fourth character strings.

17. (Original) The method of claim 16, wherein the candidate with the highest priority value is selected as the target character string from the candidate list.

18. (Original) The method of claim 1, further comprising:

examining the output of the target character string to determine if the target

character string is correct;

retrieving the candidate list of alternative character strings, if the output is

incorrect; and

selecting a character string as final output from the candidate list.

19.   (Original) The method of claim 18, wherein a user examines the output of the target

character string.

20.   (Original) The method of claim 18, further comprising displaying the candidate list

to a user interface.

21.   (Original) The method of claim 18, wherein a user selects a character string as final

output from the candidate list.

22.   (Original) The method of claim 18, further comprising updating a database

regarding to the priority information of the final output character string, based on

the selection of the final output from the candidate list.

23.   (Original) The method of claim 20, wherein the user interface comprises a pop-up

window.

24.   (Original) The method of claim 18, wherein if the candidate list does not contain the

correct target character string, the method further comprises:

providing the target character string by a user;

converting the first character string to the target character string manually; and

storing the target character string provided by the user, to a database.

25. (Original) The method of claim 24, wherein the target character string is entered by the user through a user interface.

26. (Original) The method of claim 11, wherein the set of rules is defined by a user through a user interface.

27. (Original) The method of claim 1, wherein the creation of the third character strings is performed through a look-up table.

28. (Original) The method of claim 1, wherein the creation of the third character strings is performed through an algorithm.

29. (Original) The method of claim 8, further comprising assigning a priority value to each of the third character strings.

30. (Original) The method of claim 29, wherein the priorities of the third character strings are lower than the priorities of the second character strings.

31. (Currently amended) A data processing system implemented method for converting a first Japanese character input string to a second Japanese character string, the method comprising:

     ~~receiving a hiragana input;~~

     in response to a hiragana input, automatically determining a plurality of possible katakana candidates for each sub-string of the hiragana input;

     analyzing the plurality of possible katakana candidates to convert the hiragana input to katakana characters, each of the possible katakana candidates

being associated with a score representing a relevancy between the sub-

string of the hiragana input and a possible katakana candidate;

selecting one of the katakana candidates having the highest score in response to

the analyzing if a regular Japanese dictionary does not contain one or more

well-known Japanese words corresponding to the sub-string of the

hiragana input; and

outputting converted text comprising the one of the katakana candidates to

represent the hiragana input.;

32.   (Original) The method of claim 31, wherein the converted text further comprises

kanji characters.

33.   (Currently amended) An apparatus of converting a source character string to a

target character string, comprising:

means for receiving a first character string having the source character string;

means for dividing the first character string into a plurality of sub-strings;

means for converting the plurality of sub-strings to second character strings,

through a dictionary;

means for creating artificially created words as third character strings

corresponding to the plurality of sub-strings;

means for analyzing the second character strings and the third character strings;

means for constructing fourth character strings from the second and third

character strings based on the analysis;

means for creating a candidate list based on the fourth character strings;

means for selecting the target character string from the candidate list; and

means for outputting the target character string.;

34. (Original) The apparatus of claim 33, wherein the first character string comprises Japanese hiragana characters and wherein the dictionary is stored in a machine readable form prior to the receiving.

35. (Original) The apparatus of claim 33, wherein the second character strings comprise Japanese words.

36. (Original) The apparatus of claim 33, wherein the third character strings comprise katakana characters.

37. (Original) The apparatus of claim 33, further comprising:

    means for constructing the fourth character strings from the second character strings, if the second character strings contain a character string corresponding to the first character string; and

    means for constructing the fourth character strings from the third character strings if the second character strings do not contain the character string corresponding to the first character sting.

38. (Original) The apparatus of claim 33, further comprising means for prioritizing the second character strings and the third character strings, based on priority information associated with the second character strings and the third character strings.

39. (Original) The apparatus of claim 38, the priority information comprises:

    usage frequency of each of the second character strings;

    character segment length; and

    connection relationship information between the second character strings.

40. (Original) The apparatus of claim 39, further comprising means for calculating a priority value for each of the second and third character strings based on the priority information.

41. (Original) The apparatus of claim 33, further comprising means for retrieving priority information of the second character strings from the dictionary.

42. (Original) The apparatus of claim 33, wherein the dictionary comprises multiple dictionaries.

43. (Original) The apparatus of claim 33, wherein the analysis of the second and third character strings is performed based on a set of rules.

44. (Original) The apparatus of claim 43, wherein the set of rules comprises information of usage frequency of the character strings and connection relationship between the character strings.

45. (Original) The apparatus of claim 44, wherein the set of rules further comprises information of character segment length and semantic/grammar rules.

46. (Original) The apparatus of claim 43, wherein the construction of the fourth character strings from the second and third character strings is based on the set of rules.

47. (Original) The apparatus of claim 33, further comprising means for calculating priority value of each of the fourth character strings.

48. (Original) The apparatus of claim 47, wherein the candidate list is created based on the priority values of the fourth character strings.

49. (Original) The apparatus of claim 48, wherein the candidate with the highest priority value is selected as the target character string from the candidate list.

50. (Original) The apparatus of claim 33, further comprising:
   means for examining the output of the target character string to determine if the target character string is correct;
   means for retrieving the candidate list of alternative character strings, if the output is incorrect; and
   means for selecting a character string as final output from the candidate list.

51. (Original) The apparatus of claim 50, wherein a user examines the output of the target character string.

52. (Original) The apparatus of claim 50, further comprising means for displaying the candidate list to a user interface.

53. (Original) The apparatus of claim 50, wherein a user selects a character string as final output from the candidate list.

54. (Original) The apparatus of claim 50, further comprising means for updating a database regarding to the priority information of the final output character string, based on the selection of the final output from the candidate list.

55. (Original) The apparatus of claim 52, wherein the user interface comprises a pop-up window.

56. (Original) The apparatus of claim 50, wherein if the candidate list does not contain the correct target character string, the apparatus further comprises:

means for providing the target character string by a user;

means for converting the first character string to the target character string manually; and

means for storing the target character string provided by the user, to a database.

57. (Original) The apparatus of claim 56, wherein the target character string is entered by the user through a user interface.

58. (Original) The apparatus of claim 43, wherein the set of rules is defined by a user through a user interface.

59. (Original) The apparatus of claim 33, wherein the creation of the third character strings is performed through a look-up table.

60. (Original) The apparatus of claim 33, wherein the creation of the third character strings is performed through an algorithm.

61. (Original) The apparatus of claim 40, further comprising means for assigning a priority value to each of the third character strings.

62. (Original) The apparatus of claim 61, wherein the priorities of the third character strings are lower than the priorities of the second character strings.

63. (Currently amended) A apparatus for converting a first Japanese character input string to a second Japanese character string, the apparatus comprising:

~~means for receiving a hiragana input;~~

in response to a hiragana input, means for automatically determining a plurality of possible katakana candidates for each sub-string of the hiragana input;

means for analyzing the plurality of possible katakana candidates to convert the hiragana input to katakana characters, each of the possible katakana candidates being associated with a score representing a relevancy between the~~a~~ sub-string of the hiragana input and a possible katakana candidate;

means for selecting one of the katakana candidates having the highest score in response to the analyzing if a regular Japanese dictionary does not contain one or more well-known Japanese words corresponding to the sub-string of the hiragana input; and

means for outputting converted text comprising the one of the katakana candidates to represent the hiragana input~~;~~.

64. (Original) The apparatus of claim 63, wherein the converted text further comprises kanji characters.

65. (Currently amended) A machine readable medium having stored thereon executable code which causes a machine to perform a method of converting a source character string to a target character string, the method comprising:

receiving a first character string having the source character string;

dividing the first character string into a plurality of sub-strings;

converting the plurality of sub-strings to second character strings, through a dictionary;

creating <u>artificially created words as</u> third character strings corresponding to the

plurality of sub-strings;

analyzing the second character strings and the third character strings;

constructing fourth character strings from the second and third character strings

based on the analysis;

creating a candidate list based on the fourth character strings;

selecting the target character string from the candidate list; and

outputting the target character string.;

66. (Original) The machine readable medium of claim 65, wherein the first character

string comprises Japanese hiragana characters and wherein the dictionary is stored

in a machine readable form prior to the receiving.

67. (Original) The machine readable medium of claim 65, wherein the second character

strings comprise Japanese words.

68. (Original) The machine readable medium of claim 65, wherein the third character

strings comprise katakana characters.

69. (Original) The machine readable medium of claim 65, wherein the method further

comprises:

constructing the fourth character strings from the second character strings, if the

second character strings contain a character string corresponding to the

first character string; and

constructing the fourth character strings from the third character strings if the

second character strings do not contain the character string corresponding

to the first character sting.

70. (Original) The machine readable medium of claim 65, wherein the method further comprises prioritizing the second character strings and the third character strings, based on priority information associated with the second character strings and the third character strings.

71. (Original) The machine readable medium of claim 70, the priority information comprises:

usage frequency of each of the second character strings;

character segment length; and

connection relationship information between the second character strings.

72. (Original) The machine readable medium of claim 70, wherein the method further comprises calculating a priority value for each of the second and third character strings based on the priority information.

73. (Original) The machine readable medium of claim 65, wherein the method further comprises retrieving priority information of the second character strings from the dictionary.

74. (Original) The machine readable medium of claim 65, wherein the dictionary comprises multiple dictionaries.

75. (Original) The machine readable medium of claim 65, wherein the analysis of the second and third character strings is performed based on a set of rules.

76. (Original) The machine readable medium of claim 75, wherein the set of rules comprises information of usage frequency of the character strings and connection relationship between the character strings.

77. (Original) The machine readable medium of claim 76, wherein the set of rules further comprises information of character segment length and semantic/grammar rules.

78. (Original) The machine readable medium of claim 75, wherein the construction of the fourth character strings from the second and third character strings is based on the set of rules.

79. (Original) The machine readable medium of claim 65, wherein the method further comprises calculating priority value of each of the fourth character strings.

80. (Original) The machine readable medium of claim 79, wherein the candidate list is created based on the priority values of the fourth character strings.

81. (Original) The machine readable medium of claim 80, wherein the candidate with the highest priority value is selected as the target character string from the candidate list.

82. (Original) The machine readable medium of claim 65, wherein the method further comprises:

    examining the output of the target character string to determine if the target

        character string is correct;

retrieving the candidate list of alternative character strings, if the output is

incorrect; and

selecting a character string as final output from the candidate list.

83. (Original) The machine readable medium of claim 82, wherein a user examines the output of the target character string.

84. (Original) The machine readable medium of claim 82, wherein the method further comprises displaying the candidate list to a user interface.

85. (Original) The machine readable medium of claim 82, wherein a user selects a character string as final output from the candidate list.

86. (Original) The machine readable medium of claim 82, wherein the method further comprises updating a database regarding to the priority information of the final output character string, based on the selection of the final output from the candidate list.

87. (Original) The machine readable medium of claim 84, wherein the user interface comprises a pop-up window.

88. (Original) The machine readable medium of claim 82, wherein if the candidate list does not contain the correct target character string, the method further comprises:

providing the target character string by a user;

converting the first character string to the target character string manually; and

storing the target character string provided by the user, to a database.

89.   (Original) The machine readable medium of claim 88, wherein the target character string is entered by the user through a user interface.

90.   (Original) The machine readable medium of claim 75, wherein the set of rules is defined by a user through a user interface.

91.   (Original) The machine readable medium of claim 65, wherein the creation of the third character strings is performed through a look-up table.

92.   (Original) The machine readable medium of claim 65, wherein the creation of the third character strings is performed through an algorithm.

93.   (Original) The machine readable medium of claim 72, wherein the method further comprises assigning a priority value to each of the third character strings.

94.   (Original) The machine readable medium of claim 93, wherein the priorities of the third character strings are lower than the priorities of the second character strings.

95.   (Currently amended) A machine readable medium for converting a first Japanese character input string to a second Japanese character string, the method comprising:

~~receiving a hiragana input;~~

in response to a hiragana input, automatically determining a plurality of possible katakana candidates for each sub-string of the hiragana input;

analyzing the plurality of possible katakana candidates to convert the hiragana input to katakana characters, each of the possible katakana candidates being associated with a score representing a relevancy between the substring of the hiragana input and a possible katakana candidate;

selecting one of the katakana candidates having the highest score in response to

the analyzing if a regular Japanese dictionary does not contain one or more

well-known Japanese words corresponding to the sub-string of the

hiragana input; and

outputting converted text comprising the one of the katakana candidates to

represent the hiragana input.;

96. (Original) The machine readable medium of claim 95, wherein the converted text
further comprises kanji characters.

97. (Currently amended) An apparatus for converting a source character string to a
target character string, comprising:

an input method for receiving the first character string having the source character

string;

a regular dictionary coupled to convert the first character string to second

character strings;

a virtual dictionary coupled to generate artificially created words as third

character strings based on the first character string;

a morphological analysis engine (MAE) coupled to the input method, the MAE

performing morphological analysis on the first character string and

converting the first character string to the target character string based on

the second and third character strings;

an output unit coupled to the MAE.

98. (Original) The apparatus of claim 97, wherein the input method comprises an
application programming interface (API) for receiving the first character string.

99. (Original) The apparatus of claim 97, wherein the input method receives the first character string from a keyboard.

100. (Original) The apparatus of claim 97, wherein the input method receives the first character string from a personal digital assistant (PDA).

101. (Original) The apparatus of claim 97, wherein the first character string comprises Japanese hiragana characters.

102. (Original) The apparatus of claim 97, wherein the target character string comprises Japanese characters, wherein the Japanese characters comprise:
   hiragana characters;
   katakana characters; and
   kanji characters.

103. (Original) The apparatus of claim 97, wherein the MAE divides the first character string into a plurality of sub-strings and converts the plurality of sub-strings to the second character strings through the regular dictionary.

104. (Original) The apparatus of claim 97, wherein the MAE divides the first character string into a plurality of sub-strings and generates the third character strings corresponding to the plurality of sub-strings through the virtual dictionary.

105. (Original) The apparatus of claim 104, wherein the virtual dictionary provides part-of-speech information for each of the third character strings.

106. (Original) The apparatus of claim 104, wherein the virtual dictionary assigns a priority value to each of the third character strings.

107. (Original) The apparatus of claim 106, wherein the priorities of the third character strings are lower than the priorities of the character strings from the regular dictionary.

108. (Original) The apparatus of claim 97, wherein the regular dictionary comprises multiple dictionaries.

109. (Original) The apparatus of claim 104, wherein the MAE selects candidates from the output of the regular dictionary, and the MAE selects the candidates from the output of the virtual dictionary if the regular dictionary does not contain the correct conversion.

110. (Original) The apparatus of claim 97, further comprising a dictionary management module (DMM) coupled to the MAE, the dictionary management managing the regular dictionary and the virtual dictionary.

111. (Original) The apparatus of claim 110, wherein the MAE accesses the regular dictionary and virtual dictionary through the DMM.

112. (Original) The apparatus of claim 97, further comprising a user interface coupled to provide user interaction to the conversion generated from the MAE.

113. (Original) The apparatus of claim 112, wherein if the conversion generated from the MAE is incorrect, a user selects a final output through the user interface, from a candidate list generated by the MAE.

114. (Original) The apparatus of claim 97, wherein the output unit transmits the conversion to a display device.

115. (Original) The apparatus of claim 97, wherein the output unit transmits the conversion to an application through an API.

116. (Original) A computer system having an apparatus according to claim 97.

117. (Original) The computer system of claim 116, wherein the computer system is a network computer and wherein the regular dictionary is stored in a network storage location.